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THE SCHOOL REVIEW

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THE JOLIET TOWNSHIP HIGH SCHOOL

THE Joliet Township High School was constructed during the year 1900-1, was dedicated April 4 and 5, 1901, and is devoted exclusively to secondary-school work.

The structure is located on Jefferson street, East; occupies a lot 210 feet in length by 135 feet in depth; is built of Joliet limestone, with Bedford Indiana stone trimmings; contains eighty-seven rooms, and will accommodate 1400 students in regular school work.

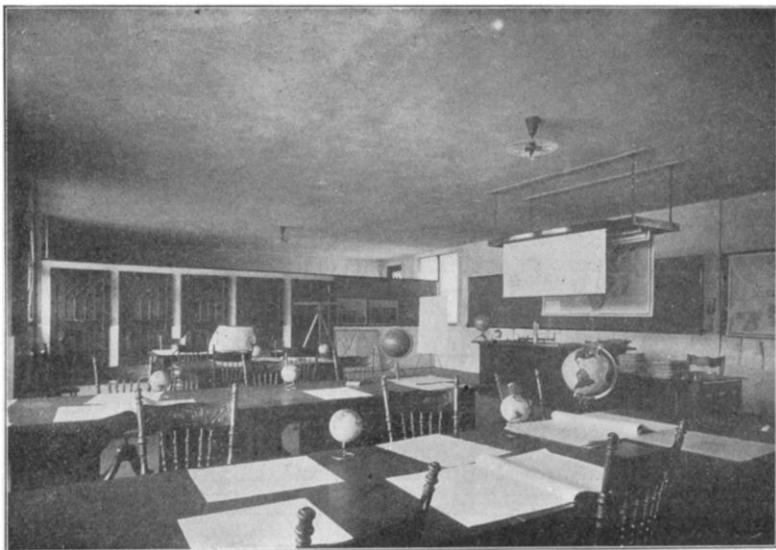
The architecture is Tudor-Gothic, and doors, transoms, windows, and furniture are made in strict harmony with this style of architecture.

The building is much like the letter E in shape, and contains two wings, between which is the part containing the assembly hall. Over this are the chemical, physical, and botanical laboratories, general lecture room, and motor room. At either side of it are the inner courts, and under it are the bicycle rooms, battery room, engineer's and janitor's rooms.

The hall floors, the stair treads, the wainscoting are all of Vermont marble trimmed with dark Tennessee marble.

As we enter the building from the west, we pass down half a dozen steps to the ground floor, where in front of us is the west court, on the north side of which are the conservatory, the door leading to the stage, and the large screened window

through which the fresh air passes to the fan. On our left is the physiographical laboratory, with recitation room, workroom, and storerooms. This laboratory is twenty-five feet by forty feet, and contains six tables, each accommodating four students. These tables contain a series of five lockers, so that five different divisions may be instructed, and yet keep the apparatus separate. The table tops are made of two-inch pine and are specially prepared so as to prevent the action of acid upon them. Revolv-



PHYSIOGRAPHICAL LABORATORY

ing chairs are used by pupils at these tables. In another part of the room are found the teacher's private desk, a large demonstrator's table on which are found the keyboard for pupils' keys and lockers for apparatus. This table is supplied with gas, water, electricity, steam, compressed air, steel standards, etc.

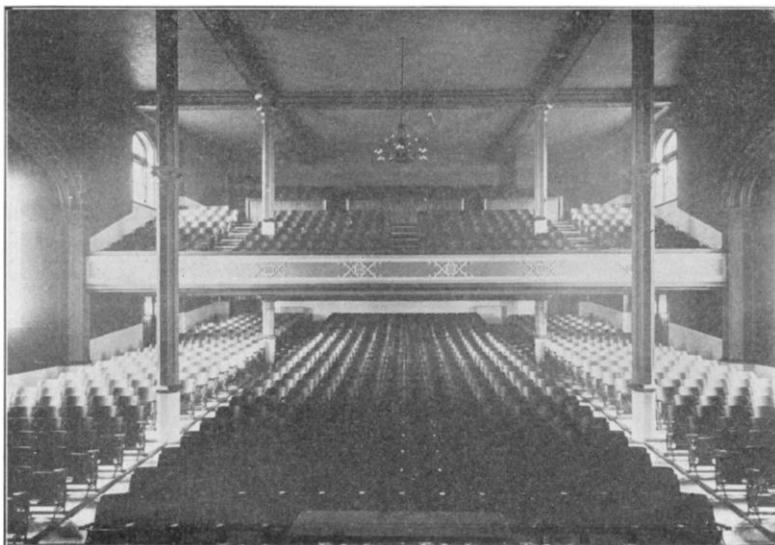
The assortment of maps and globes is complete, individual globes being supplied to pupils. Two library globes and a large relief globe are furnished for general use. There are also a full set of qualitative relief maps of the continents; several quantitative relief maps of selected regions, provided for precise work; two complete sets of physical wall maps, mounted on spring

rollers, and arranged on a special map rack suspended from the ceiling, so that the maps may be easily viewed from any part of the room. Contour maps are supplied in sufficient numbers to accommodate each pupil with a copy. These maps are not only of the United States as a whole, but also of many selected regions, chosen to illustrate the details of all typical land forms. These maps are supplemented by pictures of geographical interest.

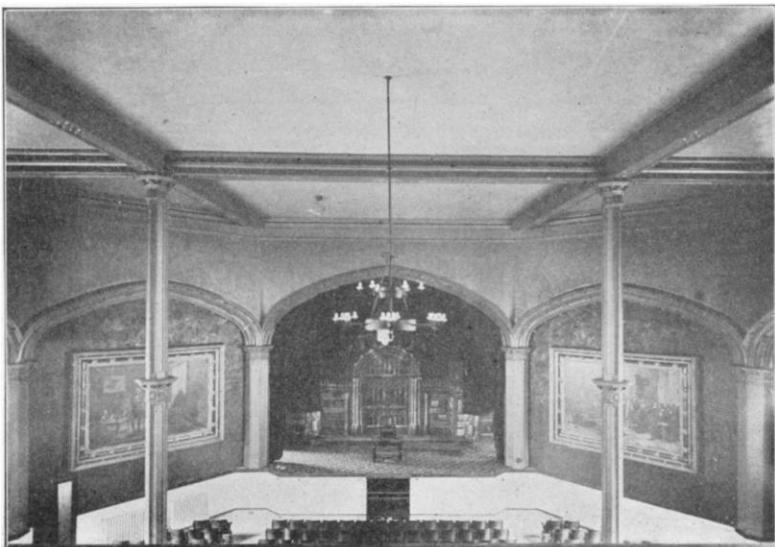
Among the apparatus here one may see a surveyor's outfit for practical field work, aneroid and mercurial thermometers, barometers, thermograph, psychrometer, rain gauge, convection and heat-angle apparatus, making possible a detailed study of the atmosphere. A dozen students' sets of minerals and rocks, together with samples of soils, help the student to determine the connection between the various materials that he finds on his field trips. The recitation room for this work only is across the hall, and is equipped in a way commensurate with that of the laboratory above described.

Passing from the physiographical laboratory down the spacious hall, we find on our right a drinking fountain, and on our left the boys' toilet room with individual, ventilated, combination lockers of sufficient number to accommodate all the boys seated for study in rooms on the ground floor. As we go on, study rooms accommodating about forty pupils are found on our right. As we near the main entrance on Jefferson street, we pass the bulletin board with a pilot light above, the boys' bicycle room, battery room, containing cells which control bells, clocks, and telephones. After passing the main entrance, we find to our right the vault room, in which are kept the records of the board of education, and, on the left, the entrance to the boiler room. East of the entrance to the boiler room are the girls' bicycle room and their bulletin board, and at the east end of this hall are found the girls' locker room and toilet room. The outdoor gymnasium for boys is entered by a door near the foot of the east stairway.

Going up the east stairs we come to the commercial room on our right. On our left, as we pass down the hall, are pupils'



ASSEMBLY HALL



STAGE

study rooms, and on our right, midway down, is the building directory. Now we reach the assembly hall. This room is built with inclined floors, and with balcony seats comfortably 1500 people. The stage is cleverly arranged with library setting, two dressing rooms for boys, and two on the opposite side for girls. Toilet room, self-draping curtain, pilot lights for orchestra, a speaking tube to engine room, a switch board controlling the two hundred incandescent lights, a gas regulator connected with the gas chandeliers, and a telephone complete the stage equipment. This room is seated with best five-ply opera chairs, and its acoustics enable an ordinary voice to be heard distinctly in any portion of the hall. Rosettes representing a combination of the Lancaster and York roses adorn the capitals and the two great arches on either side of the proscenium arch. A portcullis made of staff here and there forms a pleasing relief to the long balcony rail. This room is used for the weekly assembly meeting at 11:30 A. M. Wednesdays. At this time some one addresses the students. This room is used also for commencement, class day, literary contests, and all other public exercises. The hall presents a scene of dignity and elegance seldom seen in a public school-building.

Across the hall are the offices, with wainscoting and paneled ceilings of antique oak. The outer office serves both as a reception room and faculty room. In it is a central telephone directly connecting the superintendent's 'phone in the private office and each of the rooms where pupils study or recite. Any room may call up any other room in the building, or the superintendent may engage two rooms in conversation at once. A city 'phone is placed at the right of the building 'phone. Here is the master clock which regulates all the forty secondary clocks placed in the various rooms. The bells in all rooms are rung by it, according to the setting disk. This disk, placed in the master clock, contains a large number of holes arranged in circles. In these holes are placed steel pegs, at such points as to indicate the close of recitation periods. Bells ring in each room as soon as this revolving disk has made a contact. Periods may be made of five minutes each, or multiples of five. Near the master

ter clock is a board containing electric buttons, by which engineer, janitor, or assembly hall may be rung up. A single button ringing seventy-five bells serves as a fire alarm. A building key-board, containing 1400 duplicate keys, is placed in the outer office.

The room for male teachers is on our right as we pass the offices, and at the end of the hall on this first floor we find the seniors' room, capable of seating 125 or more. We go up the west stairway, and at the top find the juniors' room of same size



MAIN OFFICE

as the seniors' room, both being designed to accommodate all of both classes and make these two classes to study where no recitations are heard.

In all the study rooms we find an abundance of elegant slate boards, electric light and gas, telephone, teacher's wardrobe, reference library, clock, bell, thermostat, prismatic glass in upper windows, two systems of heating and ventilation.

Following this hall we pass the boys' lockers and toilet room for this floor, and come to the special recitation and conference rooms in history and English literature. These are fitted up with tables and chairs, instead of ordinary school desks.

On our right, as we pass the balcony of the assembly hall, is the general library, and immediately connected with it are the aquarium and museum—a room fronting south and about seventy-five feet long by thirty feet wide. A large amount of desirable material has been presented and is classified in such a way as to be of great service in our science classes. At the end of this hall are a drinking fountain, girls' lockers, and toilet room. At the head of the east stairway are the basket-ball



MUSEUM

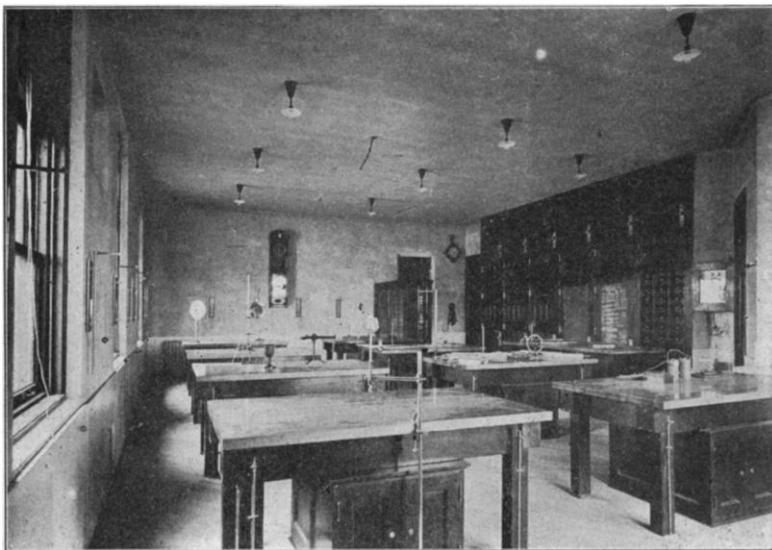
room and girls' gymnasium. When we have reached the next floor, we find the laboratories for physics, chemistry, and botany.

Seven rooms situated on the third floor are devoted to the subject of physics. They include the physical laboratory, the lecture room, the physics class room, one private laboratory, the photographic dark room, the dynamo room, and the mechanical room.

The physical laboratory is furnished with a demonstration table for the instructor's use and with eight tables for pupils' use, each accommodating four pupils.

These tables are of heavy oak, with maple tops; are furnished with lockers, adjustable supports, with gas and electric current. An abundant supply of water is provided in the room, and is easily accessible.

The room is furnished with stone shelves resting on stone brackets supported by the exterior walls of the building, thus furnishing a stable support for galvanometers, balances, and



PHYSICAL LABORATORY

other delicate instruments. All the metal used in the construction of this room is brass.

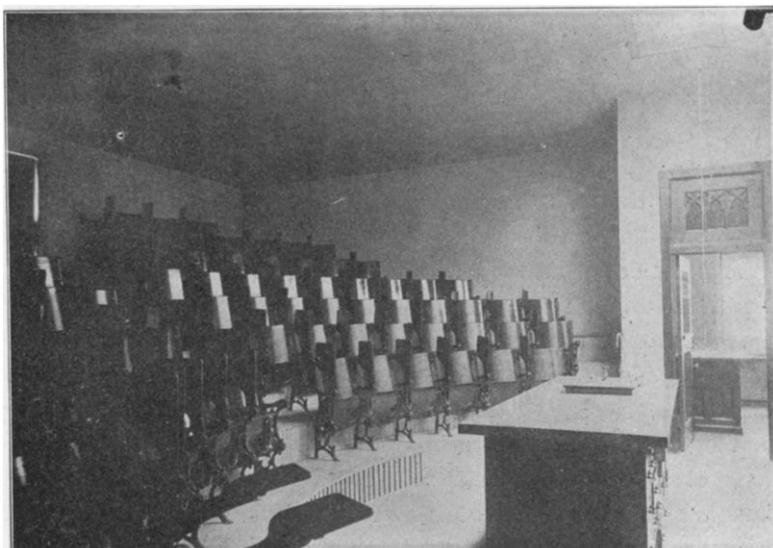
Specially devised, adjustable pendulum supports are installed permanently on the walls; also several sets of Boyle's law apparatus, a United States standard barometer, standardized thermometers, Kater's pendulum, and gauges for water, steam, gas, and compressed air.

The demonstrator's table is supplied with gas, water, steam, compressed air, and electric current, either direct or alternating of single, two-, or three-phase, and with pneumatic trough and steam siphon, fifteen lockers, and four keyboards for pupils' use.

A self-winding seconds clock, with adjustable automatic sounder and automatic circuit breaker, for exterior currents, is included in the equipment of this room.

In the center of the room is suspended an arc light with brass case and adjustable, focusing lenses for use in experimentation in light.

This laboratory is supplied with darkening curtains, permit-



LECTURE ROOM

ting it to be readily converted into a dark room for photometric and other optical measurements.

The class room contains a demonstration table of the type already described, and thirty lecture-room chairs.

The lecture room provides seats for 100 pupils and is amphitheatered with a sharp rise between seats. A projection lantern for either solar or electric light, and with accessories for special work in optics, is here installed. A skylight furnishes abundant light for this room, and a dark curtain permits of converting this into a dark room with the expenditure of the minimum of time and effort. This room contains also a demonstrator's table of the type already described.

In the mechanical room are placed a work bench, an electric motor to drive a metal and woodworking lathe, apparatus for glass-working, stone shelves, and a preparation table.

The chief feature of the dynamo room is the rotary transformer which furnishes the basis of an exceptionally complete electrical equipment. This transformer converts a 500-volt current into a direct current of voltage ranging from two to 125 volts, or into single, two, or three-phase alternating current, as may be desired. It is a three Kilowatt dynamo of the Wood system, and is used exclusively for educational purposes. The controlling switches, field rheostats, voltmeters, and ammeters for both direct and alternating currents are installed in a case on the walls. The dynamo and motor are placed in a sand box, preventing the transmission to other parts of the building of any vibrations due to rotation.

A most complete system of wiring carries the currents from this transformer to every demonstration table in the building, to each pupil's table in the physical and chemical laboratories, to the assembly hall stage, and to the botanical and physiographical laboratories.

The distributing switch board for this system is placed in the physical laboratory, and is so arranged that both the front and back are readily accessible to the electrician or to the student. It is a model of neatness and mechanical skill.

All terminals end in cut-out boxes provided with locks with individual keys, insuring safety to inexperienced pupils. A complete system of fuses protects all parts of the system from any possible danger of damage.

In the dynamo room are also placed two lantern boards, each containing sixty 110-volt incandescent lamps. These, with a complete set of voltmeters, ammeters, wattmeters, dynamometers, and other electrical instruments, furnish the equipment for an advanced course now offered in electrical measurements and dynamo study.

In providing the laboratory apparatus for the first year's work in physics, it has been the purpose to place in the hands of each pupil of each section suitable and complete apparatus

for the performance of fifty quantitative experiments. This apparatus is now installed and in use, and is of as high a grade of efficiency as can profitably be used by students of the junior year of the high-school course.

All individual apparatus and the demonstration apparatus both for physics and chemistry are stored in dust-proof cases built permanently into the walls of the various rooms.

The chemistry department consists of three rooms situated



CHEMICAL LABORATORY

on the third floor—the chemistry class room and the chemical laboratory, and lecture room before described.

The class room contains a demonstration table of the type already described, and is provided with thirty lecture chairs for pupils' use.

The chemical laboratory contains the usual demonstration table and four pupils' tables, each fitted to accommodate eight pupils.

The tables are of heavy oak with a plate-glass top resting on a corrugated rubber pad. Each pupil is provided with a pneumatic trough, a drawer and a closet under his own lock and key, for

the storage of such individual apparatus as is most frequently in use; also a rack for reagent bottles, a hood, gas, water, and electric current.

On a stone shelf occupying one entire side of this room are placed the rapid-weighing balances for class use. A number of analytical balances for more delicate quantitative work are arranged in cases easily accessible to the student.

An electric hot-plate furnishes a convenient means for evap-



BIOLOGICAL LABORATORY

orating liquids. Flues from this and from all other hoods convey all noxious gases through the top of the building.

The distilled water used in this and other departments is furnished by a Jewell water still, connecting with the steam-heating system of the building.

A complete outfit of chemical apparatus covering the field of high-school chemistry is installed and in use.

The biological laboratory occupying the northwest corner of the third floor receives light from the north and west windows, seven in number. The room is twenty-five feet by forty-five feet. It has six students' tables, one opposite each west window,

and one opposite a north window. There are also a teacher's demonstration table and a supply table, each having storage drawers and shelves. The laboratory room has five storage closets and one set of drawers. At the south end are three washbowls and a bivalve trough. Opposite the first west window is a set of overflow aquaria for plant and animal forms. Extending from this along the west wall is a slate-stone shelf, having gas, and two electrical cut-out boxes for experimental work.

The recitation room contains twenty-four chairs, storage cases extending along the north side, and a large herbarium cabinet located on the east side of the room. A door dropping down as a shelf between these two rooms allows material prepared, while a section is in the laboratory, to be placed in position ready to be taken by the next section on passing in.

The work is arranged to accommodate a maximum number of twenty-four in a section. The tables each seat four students, but contain twenty lockers, so that five sections may be provided with lockers.

Each pupil of a section has a dissecting microscope for the gross anatomy, and a compound microscope for the finer work. The latter instruments are the Bausch & Lomb continental pattern, with rack and pinion and inclined joint, two thirds and one sixth inch objectives, with a revolving nosepiece, and a one inch and two inch eyepiece. There is also a teacher's demonstration microscope with an Abbé substage condenser and a one twelfth inch oil immersion lens.

All apparatus materials are provided for individual work. Suitable glassware is provided for elementary physiological botany, and includes cylinders, beakers, thistle tubes, U-tubes, funnels, evaporating dishes, petrie dishes, and test tubes. There is a Harvard trip scale, and also a Kern balance for close determinations.

Apparatus support rods are countersunk in the student and demonstration tables. An abundance of aquaria jars and bell jars are provided, while staining and reagent bottles are at each table with stock reagent bottles in the storage closets. The

ordinary reagents and chemicals for the laboratory are kept in stock.

Preserved materials are kept in museum jars and wide-mouthed bottles. By means of the conservatory, work can be done in ecology in the building as well as work in morphology and physiology.

From the northwest corner of the biological laboratory a stairway leads to the observatory, where is installed the telescope. The room is large enough to accommodate twenty-five or more, and gives an opportunity for applying the laboratory method in the subject of astronomy.

The entire building is heated by one of three means, or by all combined, when extreme temperature may so require. These means are direct steam, pure air heated by steam in the master coil, or by both combined. Each room has separate heating and ventilating flues, so that if either is not satisfactory, it is possible to remedy the difficulty at once.

A thermostat, placed in each room, and regulated automatically, makes it possible to maintain a uniform temperature throughout the building. A fan, driven by a separate engine and capable of supplying 60,000 cubic feet of air per minute, forces into all parts of the building the pure air, after it has been passed through two strainers and has had all dirt and dust removed from it. The tunnels through which this air passes are hosed out once a week, and their cement floors kept clean and pure. The foul air is taken from the rooms by the same kind of flues as those which furnish the fresh air. A constant exit of foul air is made by having a steam pipe passed from each room through the flue to the roof. Live steam in these pipes creates a draft and takes care of the foul air.

All halls, cloak rooms, teachers' rooms, study rooms, laboratories, library, museum, etc., are lighted by gas and electricity. It has been the aim to have all study rooms lighted from one side only, and almost without exception this is true. The lighting has been made uniform and abundant by the use of prismatic glass. This glass renders it impossible to have any dark corners, so that the student seated farthest from the windows has the

same kind and the same quantity of light as that one seated directly by the window.

The shades over the prismatic windows roll down, while those on the lower windows roll up, making the control of the light's intensity easy for the teacher in charge of the room.

The special features of the building are: (1) toilet rooms, ventilated lockers, and drinking fountains, on each floor, at either end of the corridors, thus dispensing with the continual tramp, tramp, from one floor to another, to the toilet rooms and the cloak rooms; (2) the arrangement of the laboratories in such parts of the building as are most convenient for pupils, thereby causing the minimum expenditure of time in passing; (3) the complete equipment of all laboratories with the best apparatus obtainable in this country and abroad; (4) the arrangement and the equipment of an assembly hall, large enough and attractive enough to accommodate and satisfy both the student body and their audience, even when both have grown to twice their present size; (5) the general lecture room, with its magnificent equipment and capacity sufficient to accommodate one hundred or more for an illustrated lecture on any subject; (6) a telephone system, such as to make possible immediate communication between superintendent and teachers or between teachers; (7) a small reference library of well-selected books, adapted to the grade of pupils belonging in the room, thereby saving the time commonly expended in roaming over the building to consult the general library; (8) the equipment and arrangement of a museum so as to make it of practical use in the instruction of classes in physiography, geology, zoölogy, and allied sciences; (9) the outdoor gymnasium for boys, and the indoor gymnasium for girls; (10) the conservatory, so arranged and equipped that some practical work in ecology and forestry may be done; (11) the clock system, similar in arrangement to the telephone and of equal value; (12) the retiring rooms for male and female teachers, the marble hallways, and the open stair treads—the one insuring silence when pupils pass, the other securing to the long corridors abundance of light.

It has taken years of persistent, earnest work to develop a

school sentiment here which not only permits, but heartily indorses and supports, the construction of such an edifice. One of the city papers has called it "Joliet's Pride," and has made a button with the school picture on it, and a tablet also with the picture of the school. The city music teacher has written a march and dedicated it to the school, and so, with this universally kind feeling, the school has grown in a few years from 200 to 600. The building itself is not the result of one man's effort, but it rather represents, in its location, construction, arrangement, equipment, and growth, the combined wisdom and efforts of many.

The pilgrimages made to Joliet by school and college people, school architects, and boards of education from every section of the land bear some evidence of the success attending this effort of Joliet and her people.

J. STANLEY BROWN

JOLIET TOWNSHIP HIGH SCHOOL